

Sharing Place Names of Hanauma Bay: A Multimedia Prototype

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Abstract: The Hanauma Bay Nature Preserve is recognized worldwide as a model of sustainable resource use that hosts almost a million visitors annually. Educating visitors about the ecological and cultural systems of Hanauma Bay can lead to a deeper understanding, appreciation, and stewardship for the place. The goal of this instructional design project was to develop a multimedia module prototype that would educate and encourage Hawai'i residents to visit Hanauma Bay. The module utilizes interesting stories about the cultural and natural history of the bay related to the naming of locations and is designed to reach out to an audience beyond the physical park boundaries by utilizing virtual and web-based media. Thirty education and outreach specialists in Hawai'i's natural resource agencies and environmental programs evaluated the effectiveness of this resource tool. Their findings highlighted great interest in this prototype module. Participants felt access to a variety of related visual and video files provided an effective and engaging educational resource tool. Input to improve this module included increased information and stories about each site using a variety of media such as audio files or video of aerial flyovers to give more encompassing images of the locations. The implications of this virtual education strategy for non-formal learning and outreach education are also discussed.

Introduction

The Hanauma Bay Nature Preserve is a popular urban nature preserve on the island of O'ahu. It is the first marine protected area established in the State of Hawai'i and is often depicted in beautiful photographic essays because of its abundant coastal and marine life. While Hanauma Bay is recognized worldwide as a model of sustainable resource use that hosts almost a million visitors annually, its popularity is not embraced by many of the local Hawai'i residents who remember the overcrowding issues of two decades ago. In the 1980s, Hawai'i residents were discouraged from visiting the bay due to the degraded park environment resulting from the sheer numbers of visiting tourists (Lankford, Inui, Whittle, Luna, and Tyrone, 2005). With over 20 years of strict management in place, Hanauma Bay has now recovered its beauty and is a model of reef productivity. The education program at Hanauma Bay, which is under the direction of the University of Hawai'i Sea Grant College Program, is in the early stages of its programming to invite

the community and youth of Hawai‘i back to the nature preserve to access its educational services and resources by utilizing virtual and web-based media that reach beyond the physical park boundaries.

An online module was developed as an educational prototype to share information or, in some cases, re-introduce Hanauma Bay to local Hawai‘i residents through interesting legends and stories of cultural and natural history in the naming of specific locations around the bay. As a prototype, the module models an educational strategy that shares and utilizes engaging multimedia reference materials such as short videos, audio voices of the past, and integration of web-based references. It provides locally-relevant place-based knowledge and images in an electronic resource to other environmental resource educators as they consider the development of their own virtual methods to share their special places with Hawai‘i’s youth. The goal of this instructional design project was to develop and evaluate a multimedia module prototype that will educate learners on the cultural history of place names of Hanauma Bay for use by non-formal environmental educators in Hawai‘i’s resource agencies and environmental education programs.

As with many best practices of instruction, this module is not meant to be a standalone instructional module but is designed to enhance learned information either before or after a visit. As a pre-visit tool, the module will provide learners an introduction to the geography of the area and provide an orientation to the place names and its legends. As a post-visit tool, it will reinforce and help learners recall the geographical features and the cultural history that helped to define an area or a geologic feature.

Background

Although outdoor learning experiences in non-formal learning centers such as zoos and nature parks can conjure up anticipation of being immersed in a different learning experience, the visitor’s interest in the destination is often piqued by their past experiences, knowledge, and personal motivations (Falk, Reinhard, Vernon, Bronnenkant, Deans & Heimlich, 2007). Research has supported the importance of relevant pre-visit and post-visit activities that contribute to actual field experiences by adding to the depth of knowledge and retention. The information can be shared in a virtual learning experience that will supplement but not replace the field experience (Spicer & Stratford, 2001). McLoughlin (2004) discusses how additional information that provides learning expectations helps to relate the destination and its activities to the interests of the students.

The popularity and use of virtual and electronic media is already part of the non-formal learning and outreach educational system although many educators are still somewhat reluctant to completely use the technology in their educational methods because of their own technological limitations of instruction or knowledge (Huang, Rauch, & Liaw, 2010; Rosenkoetter, 2007; Underwood, Smith, Luckin, & Fitzpatrick, 2008). The biases often expressed by educators are related to perceived barriers that compare and limit virtual and actual face-to-face learning. Stumpf, Douglass, and Dorn (2008) shared that their original biases of virtual learning included the absence of certain senses such as touch

and smell in a field geomorphology course. The analysis drawn from actually walking down a desert slope would be vastly different from analyzing a visual image of that slope. Improvements in virtual technology and the ability to amplify certain senses such as sight and sound have shifted the learning paradigm and require changing the educational tools that are used to engage and teach. Students and the general public are now increasingly comfortable with learning virtually about the natural sciences and expect to supplement their education with online and multimedia references. Klemm and Tuthill (2003) stated the importance of using virtual technology in sharing and preparing for field experiences and field sites virtually as it makes it possible “to engage all students in resource rich, multimedia and hypermedia learning environments.”

Methodology

Participants

In this study, the target audience for this prototype module was education staff and outreach specialists in Hawai‘i’s natural resource agencies and environmental programs and who are interested in incorporating place-based information into their curricula and activities. Many of the invited participants are members of the Hawai‘i Environmental Education Alliance and are veteran educators with environmental and conservation organizations in Hawai‘i. They are educators of science, social studies, and environmental studies disciplines and provide services to Hawai‘i schools, youth and the general public. Current usage of online education resource curricula or tools in their profession was not a requirement.

Procedures

A web-based reference resource educational module was designed with a variety of media resources and visualizations to make it user-friendly and provide an interesting, engaging method of learning. As a prototype of a multimedia educational resource, it was designed to augment classroom and environmental outreach programs depending on the instructional strategy used by the educator. This module was not meant to be a standalone module, but as a pre- or post-visit educational enhancement tool.

Design

The module itself was designed on the free website platform, Weebly, to be self-paced and presented information through textual paragraphs, images and video. The module contained a letter of invitation and introduction to the module, consent letter, links to the demographic survey and module review survey and the content information pages. The introductory letter covered the purpose and expectations of the module and the anticipated procedure through the module. Data from the surveys were collected and summarized on Google Docs to facilitate analysis. The menu bar on each webpage provided a site map of the module with arrows on each page to easily navigate to the previous or next pages as shown in Figure 1. The interactivity of the different multimedia components and the storytelling learning strategy offered the opportunity to gain

Demographic data

The larger percentage (73%) of participants were female. More than half of the participants had advanced degrees and all had regular access to the Internet outside of their work environment. In their profession as an environmental or outreach educator, the majority of the participants service a wide variety of audiences from elementary school through college as well as the community and general public. The data indicated that given the opportunity, with the exception of one individual, the majority of the participants are already incorporating multimedia resources in their onsite instruction. This did not necessarily include the integration of virtual field sites in their instruction. With this said, given reliable Internet access, they all indicated that they would incorporate online multimedia usage into their outreach activities.

Since participants were selected as educators and outreach specialists for Hawai'i's environment, it would follow that almost all participants were familiar with the natural history of the Hawaiian Islands and many of the legends that related to the environment. There was a wide range from none at all to those very familiar with the history and cultural naming of places around Hanauma Bay among the participants, although 73% of participants felt familiar with their own special areas that they work in.

Prototype module survey

The module survey was designed to gauge the effectiveness and appropriateness of this online multimedia module for use by the non-formal environmental educator. The responses from the module survey indicated that participants felt that the module was appropriate for its target audience with the content presented in an engaging manner, to introduce the content of the module, and to reinforce place-based information about the target area.

The results from the module survey indicated that this initial effort of developing a multimedia online resource tool to share information about the naming of locations of a particular area was successful in accomplishing its educational goal. There was 97% agreement among the participants that the module content was sufficient as a means of introducing stories and legends of special places. There was also agreement by 78% of participants that the content was presented in an engaging manner as an effective pre-visit resource although there was a stronger voice by 91% of participants who felt the module was appropriate for use as a post-visit review and evaluation.

Discussion

As stated earlier, this module was designed as a prototype that would incorporate multimedia educational resources that would overcome educator bias against using technology that often accompanies virtual learning in environmental education. These educational strategies were based on the review of the literature and built into the module based on the author's skills and ability to implement these strategies. The following

discussion on what practices worked and the recommendations to improve the educational strategies of the module were based on the results of the completed surveys.

What worked

The module was successful in demonstrating that 85% of the participants using this web-based multimedia informational tool strongly agreed that it is an effective program enhancement tool that provided an orientation to the places at Hanauma Bay. They also would use similarly designed web-based tools in their educational programs.

As a prototype, it was important to define what worked out well with the module so those qualities could be retained. Numerous comments stated that using good visuals and videos were effective in engaging and maintaining attention. One comment further explained that the information from different sources of images, styles and disciplines as well as place-based perspectives presented meaningful learning experiences and had a feel of a knowledgeable guided tour. Participants all agreed that connecting the Hawaiian place name and the legend or translation behind the place names along with its visual image of each location made less common areas, such as the area to the western side of Hanauma called 'Ihi'ihilauakea with its rare native fern and the wind of the area as its namesake, much more personal to where people would want to reach out and befriend an area.

Videos that shared audio specifically about a location were particularly successful as an educational method in this module, according to feedback. For example, the YouTube video of the Hanauma Bay song by the Kamehameha School students helped to bring the words of the song alive and enhance the learning experience. While each location page had a definition in the naming of each site, the ones that shared information through a variety of multimedia components and stories had more positive responses. It was clear that in this small survey the multimedia exposure provided a very powerful outreach and educational experience. One of the reviews summarized many of the comments and encompassed the project objects by sharing that the layout provided easy access to the rich information "even if the viewer must leave and come back to the material as time would allow. There is a lot of information to take in, so having it so user friendly, I believe is very important."

What came up short with recommended changes

To determine what did not work as successfully with the module, the input from text-based responses regarding shortcomings and recommendations to improve the module was used. As a module prototype, this was one of the most significant sections of this project as it relayed how the module was perceived and could be made more usable according to the target audience by each of the participants. The survey responses in the shortcomings section were brief, as participants seemed to address these issues in lengthy responses in their recommendations for improving the module.

Several participants requested audio files to add a new dimension to the module. It is understandable to have an audio of each place name. This was also reinforced in frequent oral comments about the unfamiliarity of pronouncing Hawaiian names, especially some of the lengthy names. This is particularly evident is the correct pronunciation of the popular park, Hanauma, or the daunting place name, 'Ihiihilauakea. Audio components were recommended for more songs, chants, and historical interviews in the naming locations. There were recommendations to expand the module to include more background information of Hawaiian cultural history such as the demigods mentioned in the legends and the integration of scientific information with the natural history of the area. Some of this information would enhance the module with more interactive components and videos. While there were numerous comments for additional information and references, there were also some comments about the technology being used. Requests for larger photos with higher resolution, videos of aerial flyovers, and interactive games also require higher download speeds. There were two participants that skipped one or two of the video links on YouTube because it took too long for the videos to load. Some limitations in the presentation of the module were factors of the selected web design template and the limited technology abilities of the researcher.

Lastly, it was noted that the module needed additional activities that challenged the attention and understanding of the participant. The value of the module would be increased by the addition of learning objects and curricular games that would require recall and reinforcement of concepts by the participants. For example, a suggested pictorial quiz at the end would help test the viewer by matching label on the photo to the description of the place. This would add a whole dimension of development for the module but one that would certainly be considered.

Conclusion

Integration of natural history and cultural history through stories and multimedia resources can be successfully shared through an online resource to provide an increased depth of knowledge about an area. Those educators and outreach specialists that reach out to the general public to educate about their special areas of Hawai'i have strongly supported the further development of this prototype module with their recommendations of improvement and interest in developing modules of their own. It is important to note that many participants felt that while this module was an excellent initial effort, there were additional audio, visual, and other sensory resources that could now be integrated, given the rapid advancements of online technology.

This online educational resource was meant to augment and enhance the informal learning environment. Its use as an effective educational tool is dependent on the learning initiative and interest of the learner. It is hoped that continued development of this prototype online module would provide education about the ecological and cultural systems of the special places of Hawai'i that leads to a deeper understanding about the place. A deeper understanding is often followed by an appreciation and, through appreciation, stewardship efforts to preserve and make these resources available for future generations.

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